UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/525,021	03/14/2000	Katsuyuki Kobayashi	35.G2556	8408

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>17 June 2003</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-158 and 165-229</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-158 and 165-229</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>17 June 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

        1.☒ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) ☐ Other: .

DETAILED ACTION

The drawings and substitute specification were received on 6/17/2003. These drawings are acknowledged.

Allowable Subject Matter

1.   The indicated allowability of claims 1-158 and 165-229 are withdrawn in view of the newly discovered reference(s) to Elrod et al (previous cited), Hauck et al and Shaffer et al. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   <u>Claims 1-47, 50-75, 87-115, 127-158 and 165-228 are rejected under 35 U.S.C. 102(b) as being anticipated by Elrod et al (US 5,341,155).</u>

3.   <u>As to claims 1, 50,</u> Elrod et al teach a system associating a method which includes a coordinate (X, Y), a screen surface (20), the light pens (22) having four button switches;

a detection device (28), a plurality of photoelectric conversion elements (76, 78, 80, 82), a predetermined physical array (+X, -X, +Y, -Y);

different signal generating means (T, F, M, R), the light source cycle is at a first point "button switch ON" being at a higher intensity than a second point "button switch OFF";

threshold setting means (120, 122, 124, 126) (column 7, lines 15-22);

selecting means (118), and difference output means (100, 102, 104, 106) (see

figure 3, column 5, line 47 through column 7, line 34).

As to claims 2, 51, Elrod et al teach calculation means (112), coordinate output

means (116) (column 7, lines 23-34).

As to claims 3, 52, Elrod et al teach different signal detecting means having the

largest different signal "C" (figure 3a), the threshold setting means (120, 122, 124, 126)

sets the different signals of the predetermined number of photoelectric conversion

elements adjacent to the photoelectric conversion element having the largest different

signal (see column 14, lines 1-13).

As to claims 4, 53, Erod et al teach the threshold setting means sets the

threshold value "smooth delta" based on different signals corresponding to photoelectric

conversion elements situated on both sides of the photoelectric conversion element

having the largest different signal (see column 18, lines 2-16).

As to claims 5, 54, Elrod et al teach the threshold setting means sets the

threshold value "smooth delta" based on different signals corresponding to two

photoelectric conversion elements "Xs, Ys" equally spaced from the photoelectric

conversion element having the largest different signal "18" (column 18, lines 2-16).

As to claims 6, 55, Elrod et al teach the threshold setting means sets the

threshold value "smooth delta" at different signals corresponding to the smaller of

different signal of the two photoelectric conversion elements "Xs,Ys" equally spaced

from the photoelectric conversion element having the largest different signal "18" (see

figure 19, column 18, lines 2-5).

As to claims 7, 56, Elrod et al teach the threshold setting means sets the

threshold value "smooth delta" at different signals corresponding to the greater of

different signal of the two photoelectric conversion elements "Xs,Ys" equally spaced

from the photoelectric conversion element having the largest different signal "18" (see

figure 19, column 18, lines 5-7).

As to claims 8, 57, Elrod et al teach wherein said threshold setting means sets

the threshold value based on different signals corresponding to the 2m identified

"X=last$_x$+smoothdelta, X=last$_x$-smoothdelta" photoelectric conversion elements and the

largest different (column 18, lines 46-60).

As to claims 9, 58, Elrod et al teach selection means 118 selects a series of

consecutive photoelectric conversion elements including the photoelectric conversion

element having the maximum different signal as the effective photoelectric conversion

elements (a maximum value in table 2).

As to claims 10, 59, Elrod et al teach calculation means calculates (112) a

coordinate value based on the position of centroid (column 6, lines 15-21).

As to claims 11, 60, Elrod et al teach integration means (104); the threshold

setting means (120, 122, 124, 126) sets a threshold values based on different signals

calculated from the integrated output values of the photoelectric conversion elements

(see figure 3, column 7, lines 9-23).

As to claims 12, 14, 61, 63, Elrod et al teach threshold setting means (120, 122, 124, 126) detects the number of times "frequencies" that the integration are performed by the integration means (104) (see figure 3, column 6, lines 56-58).

As to claim 13, 62, Elrod et al teach threshold setting means (120, 122, 124, 126) controls the integration means (104) to perform the integrations until the value of the largest difference signal exceeds a predetermined values "delta(i)" (see figure 15, column 15, lines 37-55).

As to claims 15-19, 64-68, Elrod et al teach skim means (sensor "-X, -Y") for reducing the output from the photoelectric conversion elements when the output from the photoelectric conversion elements at the second points in the cycle of variation of the light source exceeds a predetermined value (signal "-X, -Y" has a reduced amplitude going through op-amp 86, 90, 94, 98, see figure 3, column 6, lines 29-46).

As to claim 20, 69, Elrod et al teach the light source 22 emitting a light spot on the screen surface 20 (see figure 8, column 10, lines 11-22).

As to claims 21-39, 70, Elrod et al teach the light pen 22 being adjacent on the screen surface 20 (see figure 5).

As to claims 40, 41, 71, 72, Elrod et al teach the detection means 28 receives light diffused through the screen surface from the pointer 22 (see figure 3).

As to claims 42, 43, 73, 74, Elrod et al teach the cyclical variation of the intensity of the light source comprises alternating the intensity of the light source 22 between a first and second level (button switches T, F, M, R make the intensity of light on and off).

As to claims 44, 75, Elrod et alt teach the dimensions of the light source are arranged so that light emitted from the light source 22 is incident light on at least two photoelectric conversion elements of the plurality of photoelectric conversion elements of said detection device 28 (see figure 3).

As to claims 90-115, Elrod et al teach a computer (29) including a data carrier carrying processor-implementable instructions for carrying a method (see column 19, lines 26-51).

4.   As to claims 45-47, 87-89, 127-129, Elrod et al teach a system associating a method which includes a coordinate (X, Y), a screen surface (20), the light pens (22) having four button switches;

a detection device (28), a plurality of photoelectric conversion elements (76, 78, 80, 82), a predetermined physical array (+X, -X, +Y, -Y);

different signal generating means (T, F, M, R), the light source cycle is at a first point "button switch ON" being at a higher intensity than a second point "button switch OFF";

threshold setting means (120, 122, 124, 126) (column 7, lines 15-22);

selecting means (118), and coordinates output means (116) (see figure 3, column 5, line 47 through column 7, line 34).

5.   As to claims 130-138, Elrod et al teach a system associating a method which includes a coordinate (X, Y), a screen surface (20), the light pens (22) having four button switches;

a detection device (28), a plurality of photoelectric conversion elements (76, 78, 80, 82), a predetermined physical array (+X, -X, +Y, -Y);

different signal generating means (T, F, M, R), the light source cycle is at a first point "button switch ON" being at a higher intensity than a second point "button switch OFF";

threshold setting means (120, 122, 124, 126) (column 7, lines 15-22);

selecting means (118), and coordinates output means (116) (see figure 3, column 5, line 47 through column 7, line 34).

As to claims 139-141, Elrod et al teach a computer (29) including a data carrier carrying processor-implementable instructions for carrying a method (see column 19, lines 26-51).

6.   As to claims 142-158, 165-191, Elrod et al teach a system associating a method which includes a coordinate (X, Y), a screen surface (20), the light pens (22) having four button switches;

a detection device (28), a plurality of photoelectric conversion elements (76, 78, 80, 82), a predetermined physical array (+X, -X, +Y, -Y);

different signal generating means (T, F, M, R), the light source cycle is at a first point "button switch ON" being at a higher intensity than a second point "button switch OFF";

threshold setting means (120, 122, 124, 126) (column 7, lines 15-22);

selecting means (118), and coordinates output means (116) (see figure 3, column 5, line 47 through column 7, line 34).

As to claims 192-213, Elrod et al teach a computer (29) including a data carrier carrying processor-implementable instructions for carrying a method (see column 19, lines 26-51).

7.   As to claims 214-228, Elrod et al teach a coordinate input apparatus using with computer (29) including processor-implementable instructions for carrying a method (see column 19, lines 26-51), a screen surface (20), the light pens (22) having four button switches;

a detection device (28), a plurality of photoelectric conversion elements (76, 78, 80, 82), a predetermined physical array (+X, -X, +Y, -Y);

different signal generating means (T, F, M, R), the light source cycle is at a first point "button switch ON" being at a higher intensity than a second point "button switch OFF";

threshold setting means (120, 122, 124, 126) (column 7, lines 15-22);

selecting means (118), and coordinates output means (116) (see figure 3, column 5, line 47 through column 7, line 34).

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claim 229 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elrod et al in view of Shaffer et al (US 6,050,690).

As to claim 229, Elrod et al teach all of the claimed limitation of claim 226, except for "the data carrier is a signal downloaded over a communication network." However, Shaffer et al teach a related system which includes the data carrier is a signal downloaded over a communication network 142 (see figure 10, column 8, line 64 to column 7, line 9). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the data carrier is a signal downloaded over a communication network taught by Shaffer et al for Elrod et al's system because this would provide the additional information for a user to view at other locations (column 9,lines 9-12 of Shaffer).

10.   Claims 48, 49; 76-86, 116-126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elrod et al in view of Hauck et al (US 5,504,501).

As to claims 48, 49, Elrod et al teach all of the claimed limitation of claim 45, except for the threshold setting means sets first and second threshold values. Hauck et al teach control means controls the selection means so that the selection means selects the effective photoelectric conversion elements based on a comparison between the first threshold the a second value "120, 121" (column 8, lines 1-14). It would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the threshold setting means sets first and second threshold values "120, 121" taught by Hauck et al for Elrod et al's system because this would improve the precise and accurate of the light pot being displayed on the projected screen (column 1, lines 25-30 of Hauck et al).

11.   As to claims 76, 86, Elrod et al teach a system associating a method which

includes a coordinate (X, Y), a screen surface (20), the light pens (22) having four

button switches;

a detection device (28), a plurality of photoelectric conversion elements (76, 78,

80, 82), a predetermined physical array (+X, -X, +Y, -Y);

different signal generating means (T, F, M, R), the light source cycle is at a first

point "button switch ON" being at a higher intensity than a second point "button switch

OFF" (see figure 3, column 5, line 47 through column 7, line 34).

Elrod et al fail to teach setting first and second threshold values of the difference

signals; determining whether a selection of effective difference signal is executed on the

basis of the first and second threshold values. However, Hauck et al teach a related

system which includes setting first and second threshold values of the difference signals

"120, 121"; determining whether a selection of effective difference signal is executed on

the basis of the first and second threshold values "120, 121" (figure 7, column 8, lines 1-

14). It would have been obvious to a person of ordinary skill in the art at the time of the

invention to utilize setting first and second threshold values "120, 121" for the different

signals; determining whether a selection of effective difference signal is executed on the

basis of the first and second threshold values "120, 121" taught by Hauck et al for Elrod

et al's system because this would improve the precise and accurate of the light spot

being displayed on the projected screen (column 1, lines 25-30 of Hauck et al).

As to claims 77-79, 85, Hauck et al teach detecting the photoelectric conversion element having the largest difference signal "115", the second threshold value "117" (see figure 7, column 8, lines 1-14).

As to claim 80, Hauck et al teach the second threshold value "117" is set on both sides of the largest different signal (see figure 7).

As to claim 81, Elrod et al teach the threshold value is set equally spaced for the photoelectric conversion element having a largest difference data (figure 4).

As to claims 82, 83, Hauck et al teach the threshold value "117" is set based on the difference signal corresponding to the smaller/greater difference signal of the two photoelectric conversion elements equally spaced for the photoelectric conversion element having a largest difference data (figure 7).

A to claim 84, Hauck et al teach identifying means, 2m of consecutive photoelectric conversion elements "104, 105, 107, 108" on either sides or both side of the largest value (106), the threshold setting means "120, 121" (see figures 6 and 7, column 7, line 51 to column 8, lines 14).

As to claims 116-126, Elrod et al teach a computer (29) including a data carrier carrying processor-implementable instructions for carrying a method (see column 19, lines 26-51).

Conclusion

12.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Kevin M. Nguyen** whose telephone number is **703-305-6209**. The examiner can normally be reached on MON-THU from 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, **Richard A Hjerpe** can be reached on 703-305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal

Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the Technology Center 2600 Customer Service Office

whose telephone number is (703) 306-0377.

Kevin M. Nguyen
Patent Examiner
Art Unit 2674

KN
September 9, 2003

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600